



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/823,749

04/14/2004

Alan Jack

003301-136

5073

21839

7590

09/30/2005

BUCHANAN INGERSOLL PC  
(INCLUDING BURNS, DOANE, SWECKER & MATHIS)  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER

NGUYEN, TRAN N

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/823,749

Applicant(s)

JACK ET AL.

Examiner

Tran N. Nguyen

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 and 17-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11-16 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

**Restriction Election**

The applicant selects group (I) claims 1-5, and 11-13 with traverse, on 9/16/05, is acknowledged.

In response to the applicant's argument, group II, the method claims of making a laminated core. On the other hand, group I, the structural claims. These two groups of claims are distinctly independent from one another in term of the process of making and the structure of the device. The fields of search for a method of making a device and for a structure of the device, i.e., the product, are not coextensive, and determinations of patentability for claims of a method of making a device and claims of the device's structure are different.

In the determinations of patentability for claims of a method of making a device, the fabrication process includes its sequential order of fabricating steps and/or tools used in these steps of forming the device are considered significant.

On the contrary, in the determinations of patentability for claims of the device's structure the limitations of device's elements and their structural relationships as well as their functional/operational relationships are considered significant. In other words, in the device claimed invention, or in a product-by-process feature of a device, the method of forming the device is not germane to the issue of patentability of the device itself. (*In re Thorpe*, 227 USPQ 964, 966.)

**Therefore, The fields of search for a method of making a device and for a structure of the device, i.e., the product, are not coextensive and the consideration for patentabilities are different and independent. This is the reason why there are two different and separate classifications for the method of forming the lamination core and the lamination core structure.**

Art Unit: 2834

Thus, the restriction, which is set forth in the previous Office Action, is deemed to be proper and hereby made FINAL.

**Claims 1-5, 11-16 and 20 are prosecuted on the merit herein.**

Claims 6-10, and 17-19 are withdrawn as non-elected invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-5, 11-16 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Masumoto et al (USP 6,856,064)** in view of **Shen et al (PgPub US 2003/0127938)** and **Hasegawa et al (USP 6566778)**.

**Masumoto** discloses core back (figs 1-8) for an axial flow electrical machine, said core back being a longitudinal coupling blank strip (fig 5) essentially formed into a ring shaped and comprising:

a plurality of stacked, ring shaped sheets of soft magnetic material (figs 1, 3-4),

a barrier of electrical resistance arranged between two adjacent sheets of soft magnetic material for reducing effects of eddy currents, wherein:

each sheet of soft magnetic material in at least a subset of said plurality of stacked, ring shaped sheets of soft magnetic material includes a plurality of circumferentially arranged tooth openings (2), each tooth opening being at least partially defined by a first tooth engaging portion and a second tooth engaging portion, said tooth openings are extending in a direction

Art Unit: 2834

substantially parallel with an axial direction of said core back through each said sheets (figs 1-4); and,

ring shaped sheets of soft magnetic material includes all ring shaped sheets of soft magnetic material in the core back;

**Masumoto** substantially discloses the claimed invention, except for the limitation of the following: *ring shaped sheets of soft magnetic material includes a first inner closing portion and a second inner closing portion which are arranged between each tooth opening and an inner perimeter of said ring shaped sheet of soft magnetic material, wherein each first inner closing portion is arranged to face a corresponding second inner closing portion, and the first end portion and the second end portion facing and attached to each other, wherein a top portion of the of each tooth essentially forming a truncated triangle of which the tapering sides is formed by the first and the second inner closing portion.*

**Shen**, however, teaches a core back (figs 7-8 and 10) having the closed slots (62) are formed by a first inner closing portion (61) and a second inner closing portion (61) which are arranged between each tooth opening and an inner perimeter of said ring shaped sheet of soft magnetic material; Shen's figs 7-8 and 10 shows that a top portion (61) of the of each tooth essentially forming a truncated triangle of which the tapering sides is formed by the first and the second inner closing portion, and a pictorial reference number (64 of fig 10) is where each first inner closing portion is arranged to face and attached a corresponding second inner closing portion. This would eliminate additional slot closure, i.e., slot wedge, while providing high magnetic permeability for the magnetic path connecting the radial inner end of adjacent teeth located at both sides of each slot.

Additionally, **Hasegawa** teaches a core back having closed slots formed by connecting the radial inner end of adjacent teeth located at both sides of each slot into an inner ring portion (22a). Hasegawa explains that such radial inner ends of adjacent teeth located at both sides of

Art Unit: 2834

each slot are formed into an inner ring portion, without gap, the slots do not open onto the surfaces and the density of the magnetic flux is evenly distributed so that there is a reduction in the eddy current generated in the opposite radially facing core (i.e., a rotor core or a stator core in a motor).

Furthermore, magnetic cores having closed slots formed by a closing portions arranged between adjacent poles to form an radial inner ring thereof are well-known in the art (see cited refs).

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the back core by configuring each tooth with inner closing portions that are arranged to face and attach to a corresponding closing portions of adjacent tooth, wherein a top portion of the of each tooth essentially forming a truncated triangle of which the tapering sides is formed by the inner closing portions, as taught by Shen. Doing so would eliminate additional slot closure, i.e., slot wedge. Also, doing so would provide a core back with high magnetic permeability for the magnetic path connecting the radial inner end of adjacent teeth located at both sides of each slot radial inner ends of adjacent teeth located at both sides of each slot are formed into an inner ring portion, without gap, the slots do not open onto the surfaces and the density of the magnetic flux is evenly distributed so that there is a reduction in the eddy current generated in the opposite radially facing core, as taught by Hasegawa.

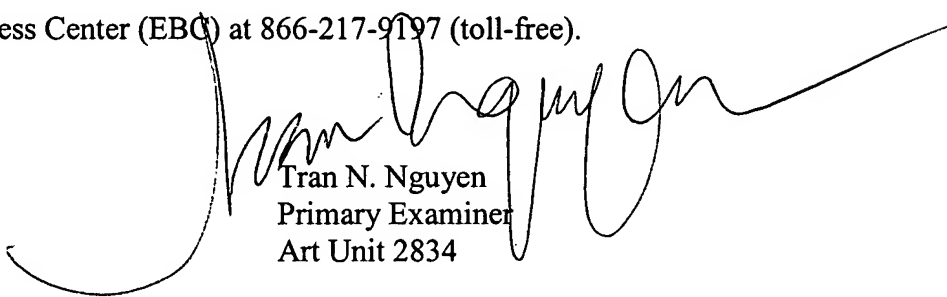
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen whose telephone number is (571) 272-2030. The examiner can normally be reached on M-F 7:00AM-4:00PM.

Art Unit: 2834

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tran N. Nguyen  
Primary Examiner  
Art Unit 2834